

Determinants Of Youth Sexual Behaviour And Its Implications To Reproductive And Sexual Health Policies And Services In Central Java

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ABSTRACT

Background : *Indonesian young people have been facing significant challenges to their health and well-being. This situation has causing an increased vulnerability to health hazards of various kinds, specially related to reproductive and sexual health, including the growing threat of HIV/AIDS. These adolescent health issues, most of which are preventable, can lead to significant morbidity and mortality.*

Method : *This paper reports on findings from a recent study, which seeks to identify predictor factors of youth sexual behaviour and their need for services, in order to derive practical policy for enhancing youth sexual and reproductive health services.*

Involving a total 2000 sample derived from youth population aged 18-24 years old. 1000 samples were each randomly selected from factory employers and university students.

Result : *The findings show that the overall pattern of sexual and reproductive youth health risk is relatively low in comparison to that in many other countries, this is partly related to distinctive and positive characteristics of the culture of Central Java. The findings also show that Self-efficacy is the strongest predictor of youth sexual behaviour.*

This study recommends that future policy and program should address how to protect oneself if engaging in sex, rather than only focusing on how to abstain from sex. Such policies and program development should be addressed to the ways to maintaining young people's positive norms and values in line with existing culture and religion by enhancing their self efficacy and life-skill through school-based sexual and reproductive health education and services.

Keywords : *Health services, reproductive and sexual health, sexual behaviour, javanese youth.*

INTRODUCTION

Indonesian young people have been facing significant challenges to their health and well-being. These include high-risk behaviours such as alcohol, tobacco, drug use and sexual behaviours that can lead to adolescent pregnancy and sexually transmitted infections (STIs) including HIV/AIDS. Broader underlying issues have been influencing adolescent health as well include socio-economic factors, political and social situations in which young people live. These young people may then face increased vulnerability to health hazards of various kinds, specially related to reproductive and sexual health, including the growing threat of HIV/AIDS. There has been an increasing number of HIV/AIDS cases in central Java during the last five years, from 14 cases in the year 2000 to 158 cases in the year 2005. Whereas, the highest proportion of HIV cases is in adolescent population aged 20-24 years old and AIDS cases is in 25-29 years old (Provincial Health Office, 2005). All these adolescent health issues, most of which are preventable, can lead to significant morbidity and mortality.

Many youth studies in Indonesia have indicated that the youth's values of life are in the process of change. Young people in Indonesia nowadays seem to be more tolerant of premarital-sexual life style. For instance, studies conducted by various institution across the nation during 1994-1999, found that five to ten percent of females and eighteen to thirty eight percent of males youth aged 16-24 years old have engaged in premarital sexual intercourse with partners of their own age (Hatmaji et al, 1993; Ford et al, 1997). Other case studies in Indonesia have reinforced the picture of greater risk on youth sexual behaviour. The findings indicated that five to ten percent of unmarried females youth and twenty to thirty percent of unmarried males youth aged 15-24 year olds have engaged in

risky sexual activity (Khisbiyah et al, 1997; Sapparuddin, 1999; Sulistinah et al, 1999; Satoto, 1995; Situmorang, 1998; PILAR 2003). Furthermore, results of a needs assessment on reproductive health among youths conducted in 12 cities in Indonesia, showed that their understanding of sexuality is very limited (Khisbiyah et al, 1997; Kusuma Buana Foundation & NFPCB, 2002). These findings obviously support the conclusion that the increase in sexual activity among youth has not been accompanied by increased knowledge about sexuality and reproductive health including HIV/AIDS, STDs and contraceptive devices.

Although there are many studies on youth sexual and reproductive health in Indonesia, most of the previous studies focused primarily on evaluating programs' outputs/outcomes with less attention to the mechanisms by which these outcomes are produced. These may be criticized as generating a rather limited understanding of the dynamic of Javanese youth sexual behaviour, its influencing factors and their need for services.

This paper reports on findings from a recent study undertaken among youth urban Central Java, which has sought to collect and analyse data concerning a rather broader set of sexually-related factors than has been the case in most previous studies on youth sexuality in Indonesia. The study has sought to explore youth sexual lifestyles within a broad socio-environmental context by contrasting youth categories of university students and factory workers. Aims of the study are to explore whether such very different social situations give rise to different sexual and reproductive health vulnerabilities and to identify key elements of practical policy and programme implications for enhancing youth sexual and reproductive health services in Central Java.

METHODS

The study applied a cross-sectional design, involving a total 2000 samples derived from the two different socio-economic background of youth population aged 18-24 years old in urban Central Java. 1000 samples were each randomly selected from low-income working youth population through factory employers in six factories, and middle class youth population university students in eight universities. Data collection for each of the two sample groups, was undertaken in the three cities of Semarang, Solo and Purwokerto which representing the major urban areas with the highest numbers of youth migrant population in Central Java. The study employed quantitative (survey) method using structured questionnaire as instrument.

The set of variables of this study were categorized based on the Bandura's (1977, 1986) conceptual framework of social learning theory. The theory is grounded in the belief that human behaviour is determined by a three-way relationship between cognitive/personal factors, environmental influences, and behaviour. For this reason, the variables were categorized into the following factors:

Personal factor included variables such as knowledge and awareness of HIV, STIs and aspects of reproductive health, attitude to relevant services, sexual and gender attitude, perceived vulnerability to reproductive health risk, general lifestyle, self esteem, locus of control, social activity, self efficacy and demographic variables (such as: age, religiosity, marital status).

Environmental factor included variables such as access and contact with sources of support and information, social culture, value and norm as a social support/model to specific behaviour.

Behaviour factor included variables such as sexual lifestyle (orientation, experience, numbers of partners), health

events (Sexual Transmitted Infection/STI's, pregnancy, abortion) and condom and contraceptive use.

Variables used in this study were measured using the following items and scales:

Self Esteem

Self esteem was measured using Barksdale scale (1996), consisting 25 items which assess positive (e.g. I don't feel anyone else is better than I am) and negative (e.g. I am not free of shame, blame, and guilt) feelings about one self. Variables was measure using scoring technique ranging from 0 (not at all true for me) to 4 (true all the time) and categorizing the score into four categories ranging from lack self esteem to high self esteem . Cronbach's alpha for the scale was found to be high at 0.73

Religiosity

Type and level of activities which related to religion (frequency of praying, worship, youth religion membership). Response scale was 3 point Likert type ranging from "always" to "never". Scores for the scale ranged from 0 to 9, with higher scores indicating higher level of religiosity.

Social Activities

Activities spent during leisure time (going to parties, disco, pub, café, etc, staying away overnight, smoking, drinking, taking drugs, reading/watching pornography, and visiting prostitutes/perek/ciblek, etc). Items were adopted and modified from the instrument used in the study in Thailand (Ford and Kittisuksathit, 1996), measured with 4 point Likert type scale ranging from "always" to "never". Scores for the scale ranged from 4 to 16 with higher scores indicating higher social activities

Knowledge of reproductive health, STDs and HIV/AIDS.

Items adapted and modified from a WHO Knowledge Attitude Behavior and

Practice (KABP) questionnaire used in Ghana in 1991, instrument assessed the overall knowledge on Reproductive health, STDs and HIV/AIDS. Some of the items used were “whether a healthy carrier can transmit HIV to others” and “whether one can get HIV/AIDS by touching the body of an AIDS patient”. Response options were “yes” or “no.” The total knowledge score was computed from the correct responses to the knowledge questions; scores for the scale ranged from 0 to 15, with higher scores indicating higher knowledge. Cronbach’s alpha for the AIDS knowledge scale was found to be high at 0.87

Attitude to relevant service.

Attitudes to services on sexual matters of young people in the area of family planning (contraception), HIV/AIDS and STDs, including sources of information. The statements were certified with 5-point Likert type response scale ranging from “strongly agree” to “strongly disagree”. The range for the attitude measure was 5 to 25, with 25 indicating the highest attitude to relevant service. Cronbach’s alpha for the scale was found to be high at 0.83

Sexual attitude

Normative attitude to premarital sex, contraception use, condom use, pornography and homosexuality. Each item was measured using Reiss scale, and the statements were endorsed with 5-point Likert-type response scale ranging from “strongly agree” to “strongly disagree”. The total score was categorized into five different categories ranging from “strongly normative” attitude to “strongly liberal” attitude. Cronbach’s alpha for the scale was found to be high at 0.82

Social support/model

Ten items measured social support/model variables. The item included the statements : “My friends think condoms should be used during sex,” , “my girlfriend (partner) thinks condoms should be used

during sex.”, and “my friends think premarital sexual intercourse is acceptable”. These statements were endorsed with a 3-point Likert-type response scale ranging from “strongly agree” to “strongly disagree.” The range for the social support/model measure was 10–30, with 30 indicating the highest perceived social support/model. Cronbach’s alpha for the scale was found to be high at 0.81

Self efficacy

Self-efficacy is the most important prerequisite for behavior change in Bandura’s social learning theory (Bandura A., 1977) Self-efficacy, which refers to one’s confidence to carry out a specific behavior, has been found to be related to a number of health behaviors, including sexual behaviors. The self-efficacy variables were adapted from a scale developed by Basen-Engquist and Parcel (Basen-Engquist K, Parcel GS., 1992) and included confidence to make decision on reproductive health, confidence to use condoms every time and confidence to stop in order to put on a condom during hectic foreplay and before sexual intercourse. Respondents endorsed these statements with 3-point Likert-type response ranging from “very sure” to “very unsure.” The Self-efficacy scale has a Cronbach’s alpha of 0.85, with scores ranging from 15 to 60. Higher scores reflected higher self-efficacy.

Data Analysis

The Chi-square statistic with its corresponding probability level, odds ratio (OR), and 95% confidence interval (C.I) were computed to examine the magnitude and significance of the bi-variate associations between variables. Factors identified as significantly associated with sexual behaviour variables were entered into a multivariate logistic regression analysis to assess the independent contribution of each factor in predicting sexual behaviour and the

Tabel 1. Socio-demographic Characteristics by sex of the Student and Factory workers Group (%)

Socio-demographic Variables	Student		Factory Workers	
	Males	Females	Males	Females
	% N=473	% N=527	% N=140	% N=860
Age :				
- 18 – 20	35	49	7	14
- 21 – 24	65	51	93	86
Age Average/mean	20 yr old		22 yr old	
Marital Status :				
- Not Married	98	98	82	83
- Married	1	1	18	16
- Separated	1	1		1
Type of resident :				
- Parent's house	48	43	44	33
- Dormitory/boarding	47	52	48	61
- Own house	1	2	5	5
- Other	4	3	3	1

probability of all variables to the occurrence of sexual behaviour.

RESULT AND DISCUSSION

Socio-demographic Characteristics

Socio-demographic characteristics such as age, marital status and type of resident of the samples are shown in table 1.

The proportion of total samples was 47% males and 53% females on student sample compares with 14% males and 86% females in the factory worker sample. Age groups' proportions by sex were generally fair, except that there were twice more females in the 18-20 years of age on factory workers. Furthermore, the mean of samples' age was significantly difference, with 20 years old on student and 22 years old on factory workers. Therefore, the pattern of socio-demographic characteristics of samples indicates that the factory worker samples were slightly older and quite higher proportion of female than student samples.

The contrast proportion between males (n=140) and females (n=860) on factory

workers samples reflected the characteristic of location from where the samples were derived. The factories which located in urban/suburban area and employed young worker age 18-24 years old were mostly garment, textile and plastic type of industries. Such industries use more female workers than male workers, which have then affected higher proportion of female employees in most such factories in Central Java. Marital status of samples shows that over 80% of both samples were single, with only under one fifth of both male and female factory workers married. Furthermore, the majority of respondents indicated a pattern of migrant youth, with over half of both samples living away from parents' residence. They live mostly in dormitory, boarding house and shared room types of accommodation with very limited supervision from their parents and families. With regard to the main motivation for migrating to urban area these two different types of respondent obviously indicated that continuing study and job-related were the main reasons.

Socio-economic characteristics.

Tabel 2. Socio-economic Characteristics by sex of the Student and Factory workers Group (%).

Socio-economic Variables	Student		Factory Workers	
	Males	Females	Males	Females
	% N=473	% N=527	% N=140	% N=860
Highest level of education				
- Diploma (D1/D2/D3)	-	-	4	3
- Senior high			74	58
- Junior high			21	38
- Elementary school			1	1
Highest level of Father's education :				
- University	26	26	0	0.5
- Diploma (D1/D2/D3)	16	14	4	2
- Senior high	35	40	18	12
- Junior high	10	10	14	19
- Elementary school	8	8	55	57
- No education	2	0.5	5	4
Father's primary occupation :				
- Unemployed	2	1	4	4
- Farmer	7	3	53	55
- Sales & service worker	33	38	26	29
- Office worker	54	53	15	12
- Professional	5	5	1	1

Analysis on socio-economic background of respondents showed different pictures between student and factory worker samples (Table 2).

The factory worker samples were mostly having lower level of education (over three quarter was high school), lower level of father's education (over half was elementary school) and more unstable type of father's primary occupation (over half was farmer) compares with those on student samples. The significantly different patterns suggesting that the samples came from different social economic background. Whilst the student came from middle class society, the factory worker samples came from lower social class society. Hence, this pattern confirmed that the samples representing two different socio-economic group of the youth population.

Behaviour Factors

The result (table 3) indicates a low prevalence of respondents' premarital sexual

experience in comparison to other countries such as Thailand (Ford and Kittisuksathit, 1996), the Phillipines, Taiwan & Hongkong (Xenos, Ahmad, Hui-sheng Lin, 2001). Only less than one fifth of males (18% students and 19% factory workers) and 5% female students and 6% female factory workers who have engaged in premarital sexual intercourse. The majority of respondents reported never having engaged in premarital sexual intercourse (81%-94% students and 70%-80% factory workers) with only (1% students and 11%-14% factory workers) being married.

Of the small minority who reported ever having engaged in premarital sexual intercourse, for the overwhelmingly majority of females (over 90%) this had taken place in a serious or engaged relationship, as was the case for two thirds of the male students and four fifth of the males factory workers. The higher proportion of intercourse in engaged relationships among factory workers than students probably primarily reflects

Tabel 3. Behavior factor Variables by sex of the Student and Factory workers Group (%).

Behavior Factor Variables	Student		Factory Workers	
	Males % N=473	Females % N=527	Males % N=140	Females % N=860
- Sexual experience :				
- Premarital sexual intercourse	18	5	19	6
- Marital sexual intercourse	1	1	11	14
- Non premarital sexual interc.	81	94	70	80
	N=81	N=26	N=18	N=29
Age of 1 st sexual intercourse:				
- <16 yrs old	5	3	2	1
- 16 – 18 yrs old	40	24	15	15
- >18 yrs old	55	73	83	84
				Mean : Student: 18 yr old F.W : 21 yr old
Type of relationship in last sexual intercourse:				
-With Sex worker	6		7	
-Casual dating	31	9	12	3
-Serious dating	60	54	24	9
-Engaged-married	3	37	57	84
Duration of relationship before 1 st sexual interc.:				
- < 1 week	13	3	2	2
- 1 wk – 3 months	19	6	15	6
- 4 months - 12 months	37	34	33	16
- > 12 months	31	57	50	76
Contraception used at last sexual interc.:				
- Condom	30	4	11	13
- Pill, IUD & inject.		4		4
- Withdrawal	37	65	39	43
- Calendar	5		6	10
- Nothing	27	27	44	30

their slightly older ages.

However, it is notable that there is a substantially higher proportion of male than female students (31% and 9%) reporting last sexual intercourse occurring within casual dating, which probably reflects intercourse with a relatively small number of girls who do engage casual sexual relations, known colloquially as ‘campus chicken’ in Central Java. Given this very small numbers these young women are unlikely to appear in sample surveys. Only a very small proportion (6%) of males reported engaging in intercourse with a sex worker. Given that this in-

volves admitting in stigmatized behaviour which has bad consequences for social image, it could perhaps be plausibly speculated that there could be some under-reporting for this variable.

Furthermore, duration of relationship before first sexual intercourse reinforces the overall picture of a low pattern of risk, with over half of respondents reported >1 year relationship before sexual intercourse. Highest proportion of respondents’ age of first sexual intercourse were mostly >18 years old (over three quarter). Given that range of high school age Indonesian student is 16 – 18 years old, indicat-

Table 4. Multiple logistic regression of determinant factors to sexual behavior of student and factory worker.

Personal Factors	Student N=500			Factory Workers N=500		
	p	O.R	95% C.I	p	O.R	95% C.I
- Religiosity (very not relg)	-	-	-	0.006	7.2	1.78 - 29.13
- Social Activity (very high)	0.001	5.74	2.13 – 15.47	0.024	3.5	1.23 - 10.35
- Self esteem (lack)	0.043	5.55	1.05 – 29.24			
- Self efficacy to decision on reprod. health (low level)	0.000	15.27	3.31 – 70.56	0.003	6.1	1.81-19.94
- Attitude to relevant service (disagree)	-	-	-	0.017	0.16	0.03 – 0.72
- Knowledge on reprod. health (very low)	0.02	0.33	0.13 – 0.84	-	-	-
- Social support to premarital sex (strong)	0.036	0.16	0.03 – 0.88	-	-	-
Probability :		53.2%			12.7%	

ing that the first sexual intercourse were mostly took place after finishing high school. Young people in this study, mostly (over half) migrate away from their parents for continuing education or working. The finding reinforces the view that premarital sexual intercourse occurrences are likely related to less supervision of parents, as well as simple maturation.

However, contraception use within last sexual intercourse shows a picture of greater risk (table 5). Only under one third of male and female respondents reported condom use, with the remainder used nothing (over one quarter of student and over one third of factory worker) or non effective contraceptive methods such as withdrawal (over one third of males and half of females) and calendar method (5% to 10 % of samples). There is no significant difference in pattern of contraceptive use between student and factory worker respondents. The high proportion of respondents who reported non-contraceptive use shows that there are some factors such as lack of information, lack of services, and culturally-related barriers which may have caused obstacles for youth population to access such services (Murdijana, 1998; Moeliono L, et all, 1998).

Factors influencing youth sexual behaviour

The influences upon youth sexual behaviour in this study were determined by using multiple logistic regression procedure (table 4).

The results showed that the influencing variables to premarital sexual intercourse occurrence on student and factory worker samples were different

Student samples with very high social activity were almost six times (O.R.=5.74) more likely to engage in premarital sexual intercourse than those with moderate and low social activity. Furthermore, those with lack of self esteem and low self-efficacy to decision on reproductive health were over five time (O.R.=5.55) and over fifteen time (O.R.=15.27) more likely to engage in premarital sexual intercourse than those with high self esteem and high self efficacy. The findings also indicated that among those three variables, low level of self-efficacy to decision on reproductive health was the strongest influencing factor to premarital sexual intercourse occurrence on student samples (O.R.=15.27). Within the context of this study, self-efficacy might function as a central mediator through which other cognitive factors, including knowledge, expect-

ancies and self-comparison with one's peers, exerted their influence on sexual behaviour. Self-efficacy mediates behaviour and determines whether people initiate an action, how much effort they expend, and how long they persist in the face of difficulty (Bandura, 1986). People will practice safer sexual behaviour only to the degree that they believe they can protect themselves when needed. Level of youths' self-efficacy therefore, becomes the most important factor to determine whether and how they perform sexual behaviour.

Other influencing factors to sexual behaviour variables on student samples were 'low-very low' knowledge on reproductive health and 'strongly' social support to premarital sex. Such variables however, influenced as a protective factor to premarital sexual intercourse. Student samples with 'low-very low' knowledge on reproductive health (O.R.=0.33) and 'strongly' social support to premarital sex (O.R.=0.16) were not likely to engage in premarital sexual intercourse. Although lower knowledge was a protective factor, it does not mean that this study suggests to maintain the low level of knowledge on reproductive health, STIs and HIV/AIDS among the youth population in Central Java Indonesia. Other than to explain that such knowledge might not act as a direct influencing factor to youth sexual behaviour. There might be some other factors through which knowledge influencing youth sexual behaviour. As Bandura (1990) suggests that behaviour is not directly a result of knowledge or skills, but a process of appraisal by which people integrate knowledge, outcome expectancies, emotional states, social influences, and past experiences to form a judgment of their ability to master a difficult situation. Therefore, this study suggests that by improving knowledge on youth sexual and reproductive health, STIs and HIV/AIDS only, may be necessary but may not be sufficient to

achieve behavioural changes.

By using all those influencing factors into logistic regression equation, the probability of premarital sexual intercourse occurrence was 53.2 %. The result suggested that the probability of premarital sexual intercourse occurrence on student samples with very high social activity, lack self esteem, low self efficacy to decision on reproductive health, very low knowledge on reproductive health and strongly social support to premarital sex is over fifty three percent.

Although there were some overlapping, factors influenced premarital sexual occurrence on student and factory worker samples were different. Factory worker samples with very low level of religiosity and low level of self-efficacy were over seven times (O.R.=7.2) and six times (O.R.=6.1) more likely to engage in premarital sexual intercourse than those with high level of religiosity and self-efficacy. Furthermore, those with high level of social activity were over three times (O.R.=3.5) more likely to engage in premarital sexual intercourse. The finding suggests that by keeping youth in high level of religiosity might prevent them from high-risk sexual behaviour.

However, it is difficult to identify whether religion or other social forces causing such environment. In the past, Islam and the Dutch may have influenced the notion of sexuality among the Indonesians in a conservative direction, but nowadays, Western influences are liberal. It is possible that people have conservative attitudes to sexuality and to practise religious beliefs and yet practise liberal sexual behaviour. While Westernisation in the past had more influence in promoting conservative sexuality, in recent times, the influence of Westernisation has been more towards developing a more liberal sexuality.

By using all influenced factors into logistic regression equation, the probability of

premarital sexual intercourse occurrence on factory worker samples was 12.7 %. Therefore, this study revealed that the probability of premarital sexual intercourse occurrence among factory worker samples with low level of religiosity, very high level of social activity, low level of self-efficacy and disagree to relevant service was almost thirteen percent.

CONCLUSION

The overall picture of sexual and reproductive health-related risk of youth in Central Java shows a clear pattern :

1. Firstly in terms of levels of premarital sexual experience only a minority appear to be putting themselves at risk of sexually transmitted infection and unwanted pregnancy. This is partly because of the positive norms and values of the culture in Central Java. In general there is a negative or at best ambivalent attitude to premarital sex within the culture. However within the minority who do engage in premarital intercourse, there is a major public health concern given the very low level of contraceptive (even condom) use. With reference to the comparison of the two samples group reference to their social backgrounds, shows that they come from very different socio-economic situations. However the detailed analysis of their sexual lifestyles and values show a very high level of similarity. Clearly sexuality for both groups is shaped by the culture of Central Java, along with the social changes which are so rapidly transforming this province..
2. Secondly, the influencing factors of premarital sexual intercourse on student and factory worker samples were significantly different. Such variables as high level of social activity and low level of self-efficacy to decision on

reproductive health were stronger influencing factors to premarital sexual intercourse occurrence on student than factory worker samples. Other variables such as 'low level' of religiosity and 'disagree' attitude to relevant service were the influencing factors on factory worker samples only, whereas, 'lack' self esteem, 'very low' knowledge on reproductive health and 'strongly' social support to premarital sex were the influencing factors to premarital sexual intercourse occurrence on student samples only.

3. Thirdly, influencing factors to premarital sexual intercourse on student samples could predict 53.2 % occurrence of premarital sexual intercourse, compares with 13 % of occurrence on factory worker samples. The result suggested that by intervening the determinant factors through relevant programs might prevent over fifty three percent occurrence of premarital sexual intercourse on students and thirteen percent on factory workers.
4. Finally, this study recommends further policies and programs/services development, as follows :
 - A Local-based approach to Sexual and Reproductive Health (SRH) services should be strongly anchored in respect for local cultural and religious diversities, traditions and sensitivities.
 - Future policies and program development should addressed to the ways to maintaining youth's positive norms and values in line with existing culture and religion
 - Program and services should be focused on strengthening youth's self efficacy through developing their life-skill, in order to increase youth's ability to avoid and / or reduce risky sexual behaviour
 - Social learning theory emphasizes that similarities in age and interest will

increase the persuasiveness of the messages. Therefore, “peer to peer” education program would be a powerful approach in educating youth in Central Java.

- Enhancing advocacy which focusing upon politicians, community leaders, religious leaders, parents, teachers and health authorities in order to establish a social climate in which effect SRH services for youth.
- The participation of young people in policy and programme development are also strongly recommended. Youth should be actively involved in the planning, implementation and evaluation of development activities that have a direct impact in their daily lives, in particular activities concerning reproductive health, including the prevention of early pregnancies, sexuality education and the prevention of HIV/AIDS and other sexually transmitted infections.

ACKNOWLEDGEMENT

The authors would like to gratefully acknowledge the funding support from The Wellcome Trust (Grant No:AL065113) to the collaborative research between Department of Geography University of Exeter U.K and Faculty of Public Health Diponegoro University, Indonesia. We would also like to thanks to Sakundarno Adi, Hanifa Maherdeny, Suratman, Kusyogo Cahyo and Samsulhuda BM for their assistance in the survey and data management. Feedback and suggestions from Bagoes Widjanarko, Budioro Brotosaputro and Muhammad Riza (Director of NGO PILAR) are highly appreciated as well.

REFERENCES

- Bandura A . 1977. Social learning theory. Englewood Cliffs, NJ 1977: Prentice Hall.
- Bandura A. 1986. Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ 1986: Prentice Hall.
- Bandura A. 1990. Perceived self-efficacy in the exercise of control over AIDS infection. *Eval Program Plann* 1990;13:9 –17.
- Benda, Brent B, Corwyn, Robert Flynn. 2000. A Theoretical Model of Religiosity and Drug Use with Reciprocal Relationships: A Test Using Structural Equation Modeling. *Journal of Social Service Research* 2000; 26(4): 43-67.
- Basen-Engquist K, Parcel GS. 1992. Attitudes, norms, and self-efficacy: A model of adolescents’ HIV-related sexual risk behavior. *Health Educ Q* 1992;19: 264–77.
- Ford N and Kittisuksathit S. 1994. *Destinations Unknown : The Gender Construction and Changing Nature of Sexual Expressions of Thai Youth*. *AIDS Care* 1994;6(5):517-31.
- Ford N and Kittisuksathit S. 1996. *Youth Sexuality : The Sexual Awareness, Lifestyles and Related-Health Service Needs of Young, Single, Factory Workers in Thailand*. Research report. ISPR, Mahidol University.
- Ford N, Siregar K, Ngatimin R, and Maidin A. 1997. *The Hidden Dimension : Sexuality and Responding To The Threat Of HIV/AIDS In South Sulawesi, Indonesia*. *Health And Place* 1997; 3(4): 249–58.
- Hatmadji Sri H., Rochani S. 1993. *Adolescent Reproductive Health in Indonesia*. Research Report of Joint Cooperation : Demographic Institute Faculty of Economic, University of Indonesia,

- The Ford Foundation, RAND Corporation, The World Health Organization and Yayasan Kusuma Buana. Jakarta.
- Khisbiyah Y, Murdijana D and Wijayanto. 1997. Kehamilan Tak Dikehendaki di Kalangan Remaja (Unwanted Pregnancy among Adolescents). Research Report. Yogyakarta: Center for Population Studies, Gadjah Mada University.
- Kusuma Buana Foundation (YKB) and National Family Planning Coordination Board (NFPCB/BKKBN). 1994. Need Assessment: Kesehatan Reproduksi Remaja di 12 Kota di Indonesia tahun 1993 (Adolescent reproductive health in 12 Cities in Indonesia year 1993). Research Report. Jakarta.
- Moeliono L, Anggal W, Piercy F. 1998. HIV/AIDS—risks for underserved Indonesia youth : A Multi-Phase Participatory Action-Reflection-Action Study. *Journal of HIV/AIDS Prevention & Education for Adolescence & Children* 1998; 2(3): 21-9: New York : The Haworth Press, Inc.
- Murdijana D. Needs and risks facing the Indonesian youth population. IPPA and Population Council. 1998. Research report of Asia & Near East Operation Research and Technical Assistance Project. *Journal of Ceria (cerita remaja Indonesia)* online <http://www.bkkbn.go.id/hqweb/ceria/ma56masalah.html>.
- PILAR. 2003. Annual report (unpublished). Semarang.
- Provincial Health Office. 2005. Annual report on HIV/AIDS in Central Java. Semarang.
- Saparuddin, Gita Marina. 1999. Perilaku Berisiko Remaja (Youth Risk Behaviour). *Warta Demografi* 1999; 29(4): 20–6.
- Satoto. 1995. Perilaku tentang seks, PMS dan AIDS di kalangan siswa sekolah menengah di Kotamadya Semarang (Sexual behaviour, STD and AIDS among high school student in Semarang). In AA Gde Muninjaya AA, editor. *AIDS dan Remaja*. Jakarta : Jaringan Epidemiologi Nasional.
- Situmorang A. 1998. Virginity and premarital sex: attitudes and experiences of Indonesian young people in Medan. Paper Presented at Ninth National Conference Australian Population Association: Brisbane.
- Sulistinah I A., et al. 1999. Baseline Survey of Young Adult Reproductive Welfare in Indonesia. Research report of National Family Planning Coordinating Board, East-West Center, Pathfinder/ Focus, World Bank, USAID.
- Sulistinah I A., Westley S B. 1999. Indonesian Survey Looks at Adolescent Reproductive Health. East West Center Population and Health Studies. *Asia-Pacific Population & Policy* 1999 (51).
- Xenos P, Sulistinah A., Lin H. et al. 2001. The Timing of Union Formation and Sexual Onset: Asian Evidence from Young Adult Reproductive Health Survey. East-West Center Working Papers, Population Series, 108-4. Hawaii U.S.A.